

Groundwater Management and Policy in Alabama: How Much is Enough?

2016 ADEM Groundwater Conference

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AWAWG Update

- **Focus Area Panels**

- FAPs are composed of invited experts in water resource and related issues who will, at the direction of Governor Robert Bentley and the AWAWG, develop strategies and recommendations for a number of critical subject areas related to water resource management and policy. Focus Area Panel issues include:
 - Riparian and Other Legal Concerns
 - Local/Regional Planning
 - Water Conservation, Efficiency, and Reuse
 - Certificates of Use, Permitting, and Interbasin Transfers
 - Instream Flow
- **Comprehensive Stakeholder Involvement**
- **FAP Reports due in August**

Local/Regional Planning FAP

What Will Alabama Water Resource Management Look Like?

1. Identify water resource related entities that currently exist under state law and their specific functions
2. Identify options of local governance to provide input into future water-quantity planning.
3. Identify appropriate local/regional level activities needed to support statewide water-resource planning and management.
4. Determine the appropriate geographic scale for local/regional water-resource planning and management.
5. Determine an appropriate organizational model to implement local/regional water-resource planning and management activities.

Statewide Water Resource Assessment Update

- **Surface water**

- Office of Water Resources is preparing an assessment of surface-water quantity.

- **Groundwater**

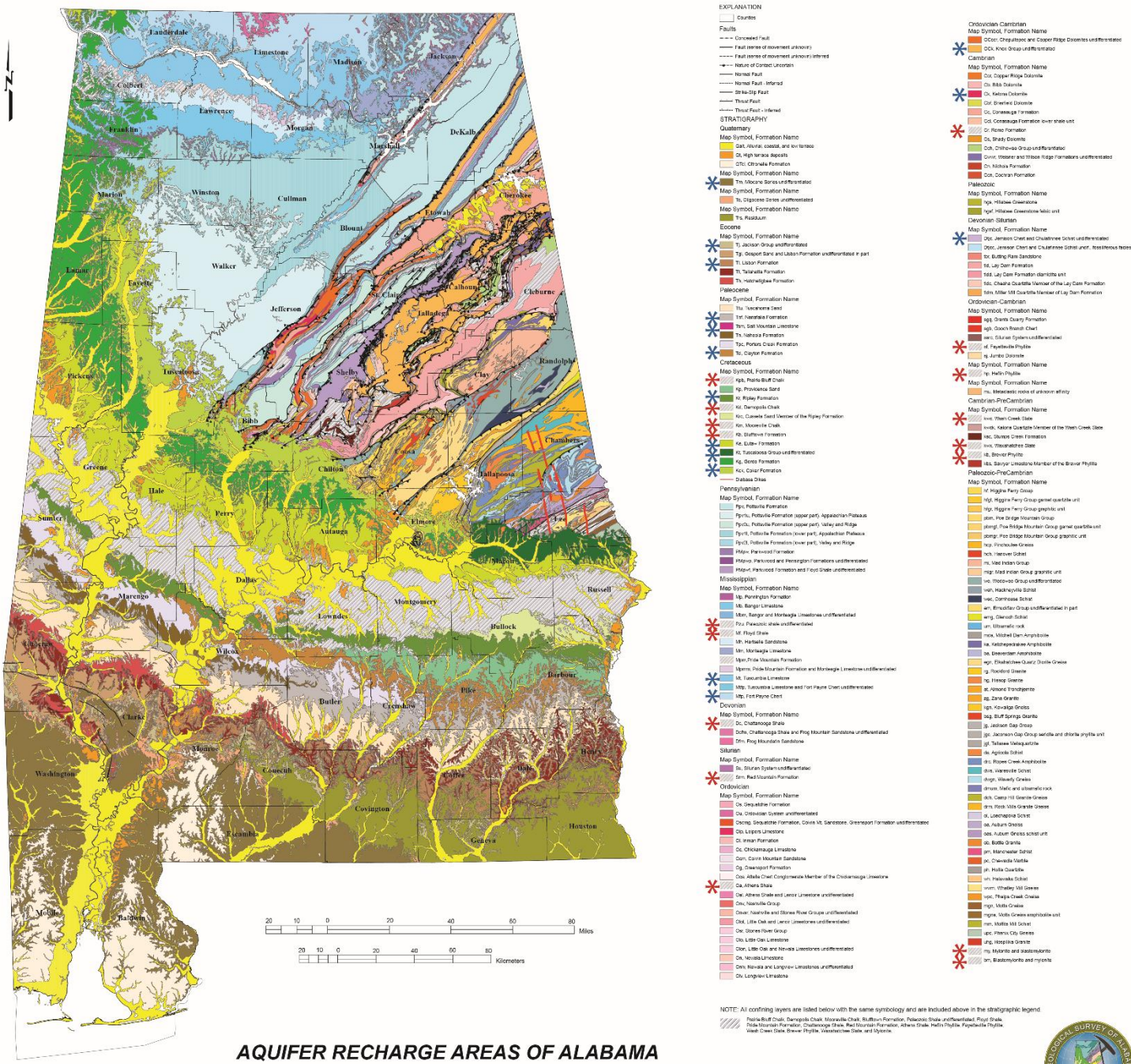
- Geological Survey of Alabama is preparing an assessment of groundwater quantity.

- **Assessment Reports due on December 31, 2016**

Groundwater

Aquifers Recharge Areas and Confining Layers

160
Geologic
Formations
17 Confining
Layers
14 Major
Aquifers
129 Minor
Aquifers



By:
Marion Cook and Alana Rogers
2013



Surface Water

14 Major Watersheds
47,000 Miles of Perennial
Streams
563,000 Acres of Lakes

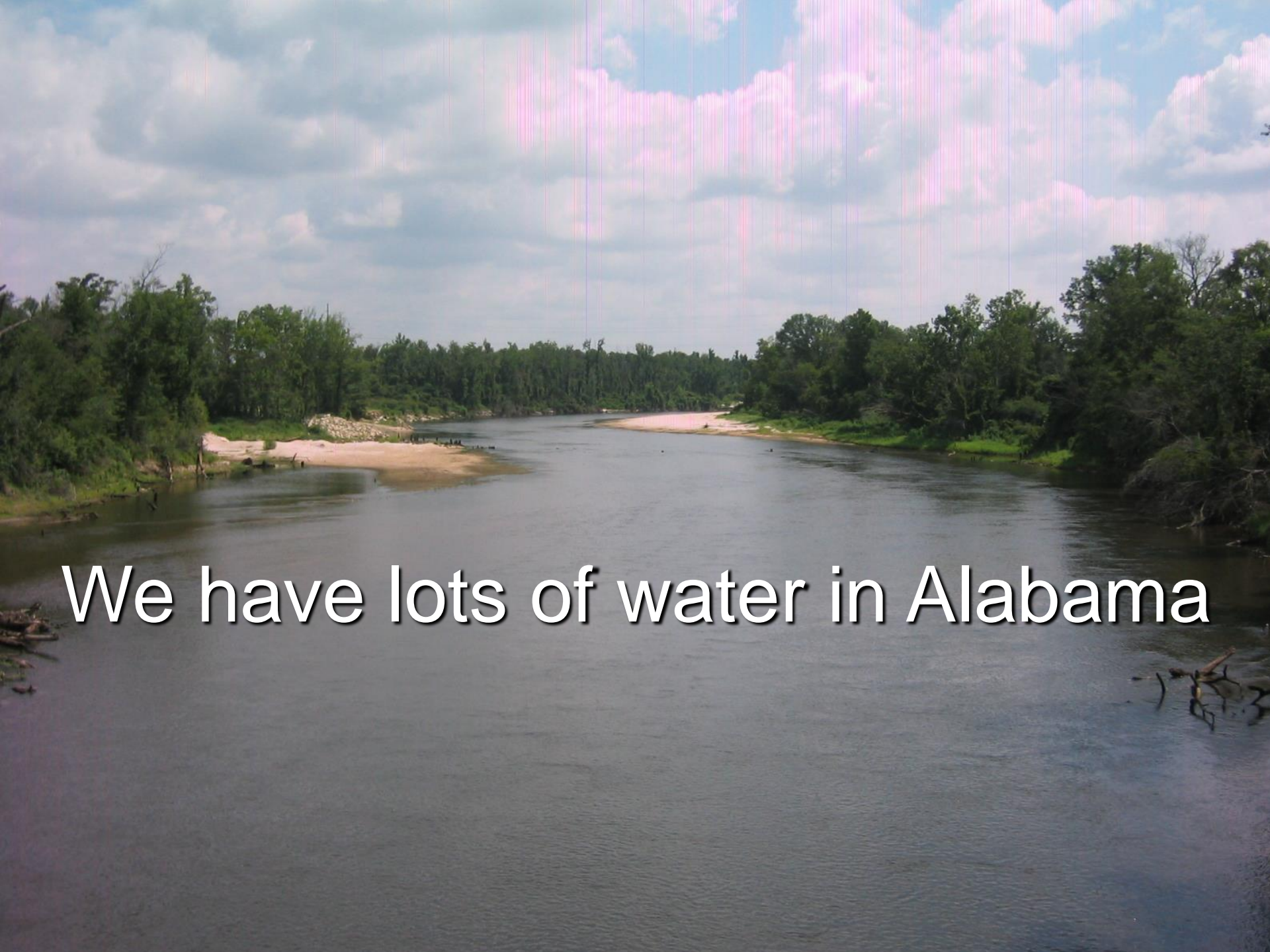




What are the threats to completion of a
water resource management plan
and policy initiatives?

The Good News





We have lots of water in Alabama

The Bad News



We have lots of water in Alabama



- Executive and legislative branch distractions and complacency.
- Industry stakeholder interests that conflict with prudent water resource management.
- Agricultural stakeholder lack of cooperation.
- Grassroots stakeholder complacency.
- Climatic and hydrologic conditions that create a sense of plenty.
- Governmental agency conflict and lack of coordination and cooperation.

Threats to Poorly Managed or Unmanaged Alabama Water Resources



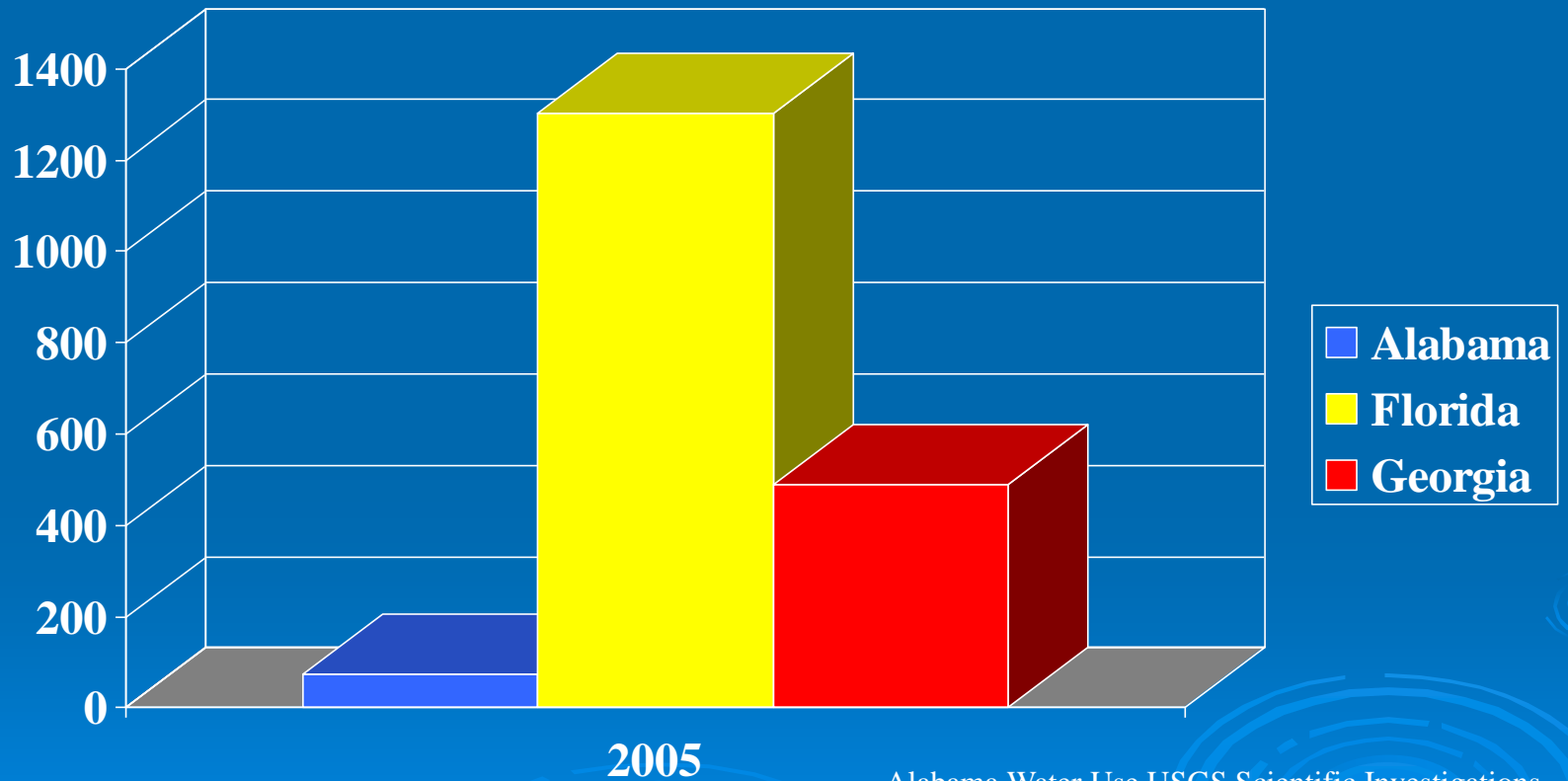
Extensively Expanded and Poorly Managed Irrigation

U.S. Groundwater Sourced Irrigation

49.5 bgd Largest withdrawal sector
65.1% of total groundwater withdrawals
38.4% of total irrigation water use
476,000 irrigation wells serving 121,000 farms

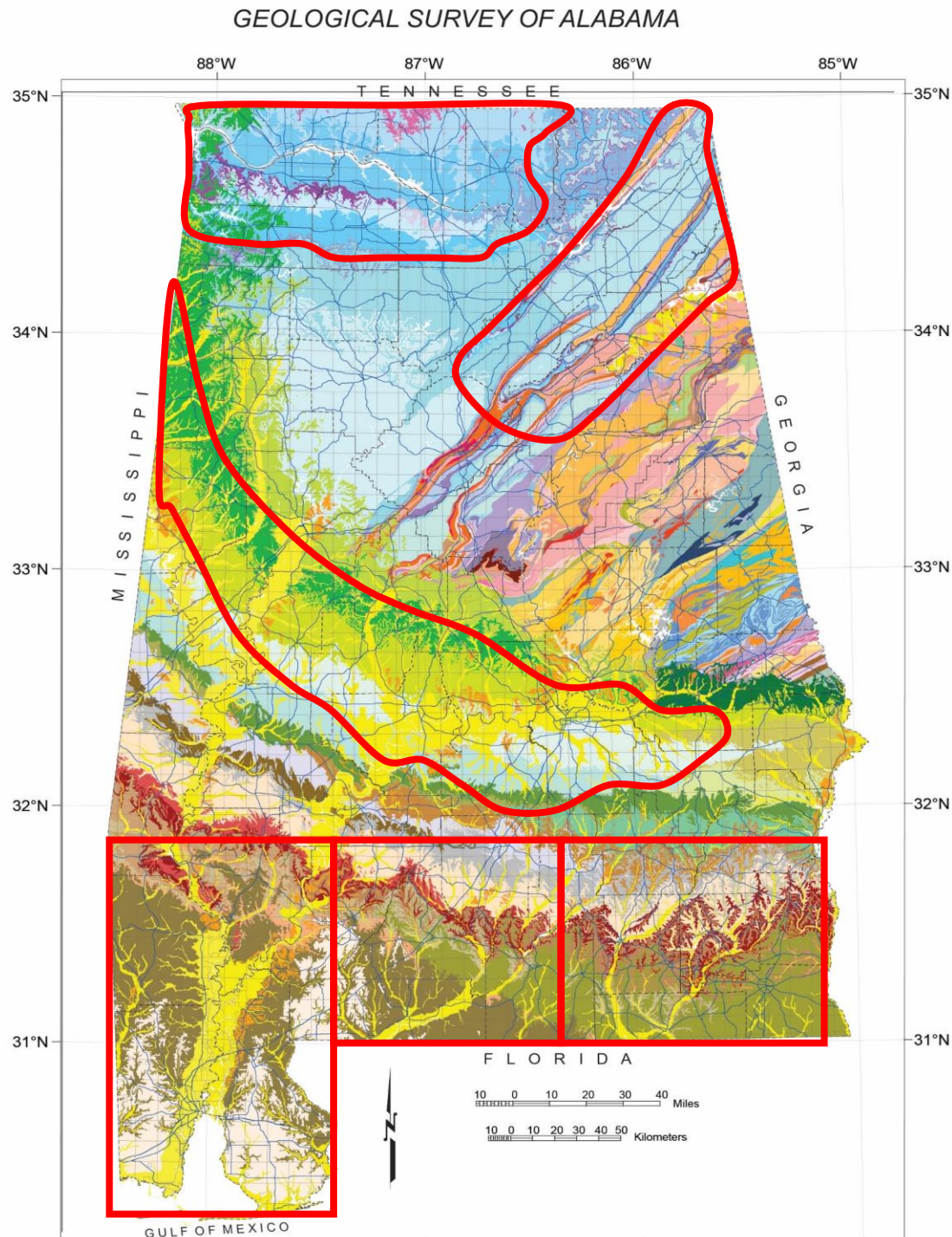


Irrigation from Groundwater Sources, 2005 (mgd)



Alabama Water Use USGS Scientific Investigations
Report 2009-5163
Florida Department of Environmental Protection and
Florida Water Management Districts, 2008
Georgia Environmental Protection Division, 2009

Alabama Groundwater For Large-Scale Irrigation



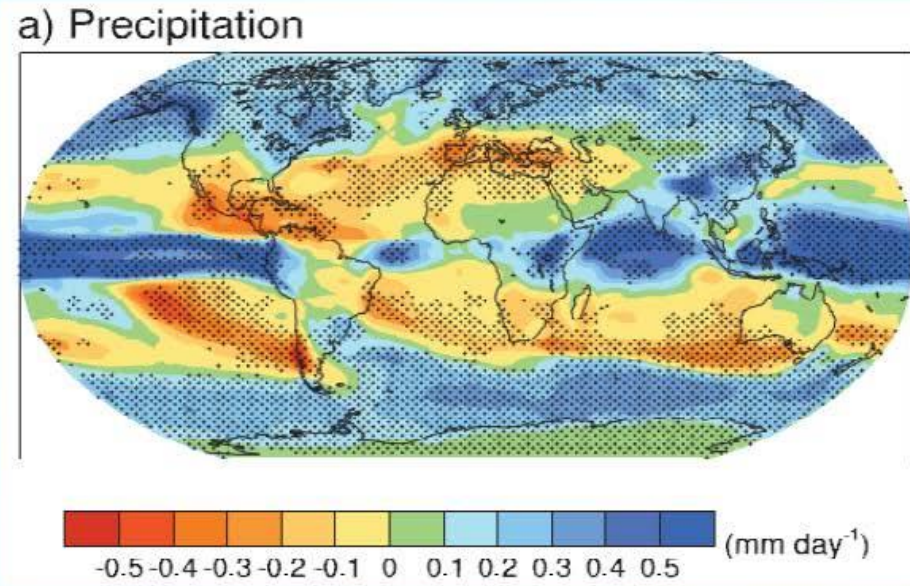
Climate Impacts

Recurring Severe Drought

“Drought in Alabama is not a water supply issue, it is a water management issue.”

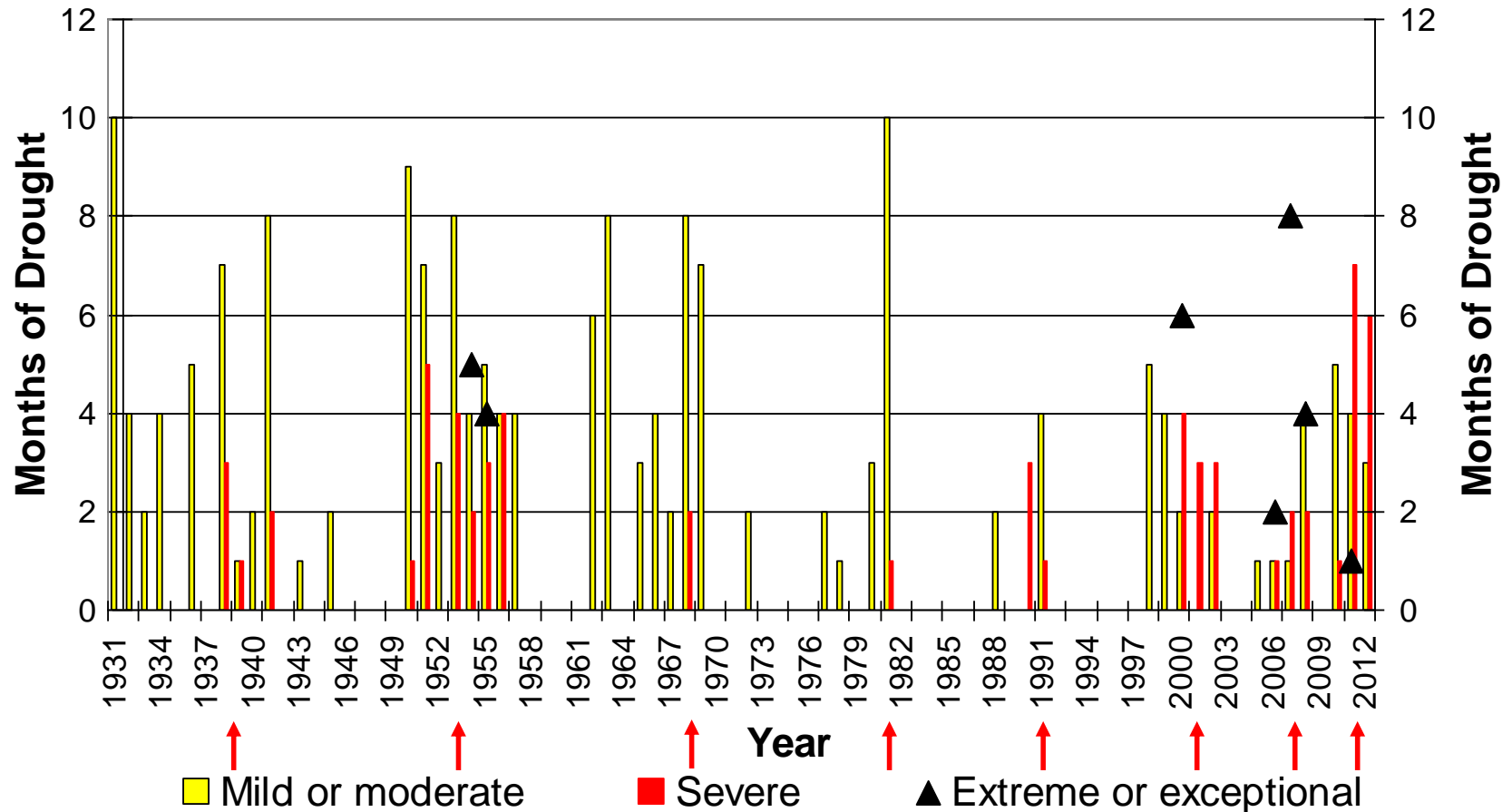



Climate models predict drying in the Southern High Plains and Southwest but no change or an increase in precipitation in the Southeast



According to Eike Luedeling, an expert in plant sciences at the University of California-Davis, higher temperatures and extended drought will likely decimate the state's \$10 billion fruit and nut industry.

Occurance of Drought in Alabama 1931-2012





Aging and Inadequate Infrastructure and Inadequate Water Pricing

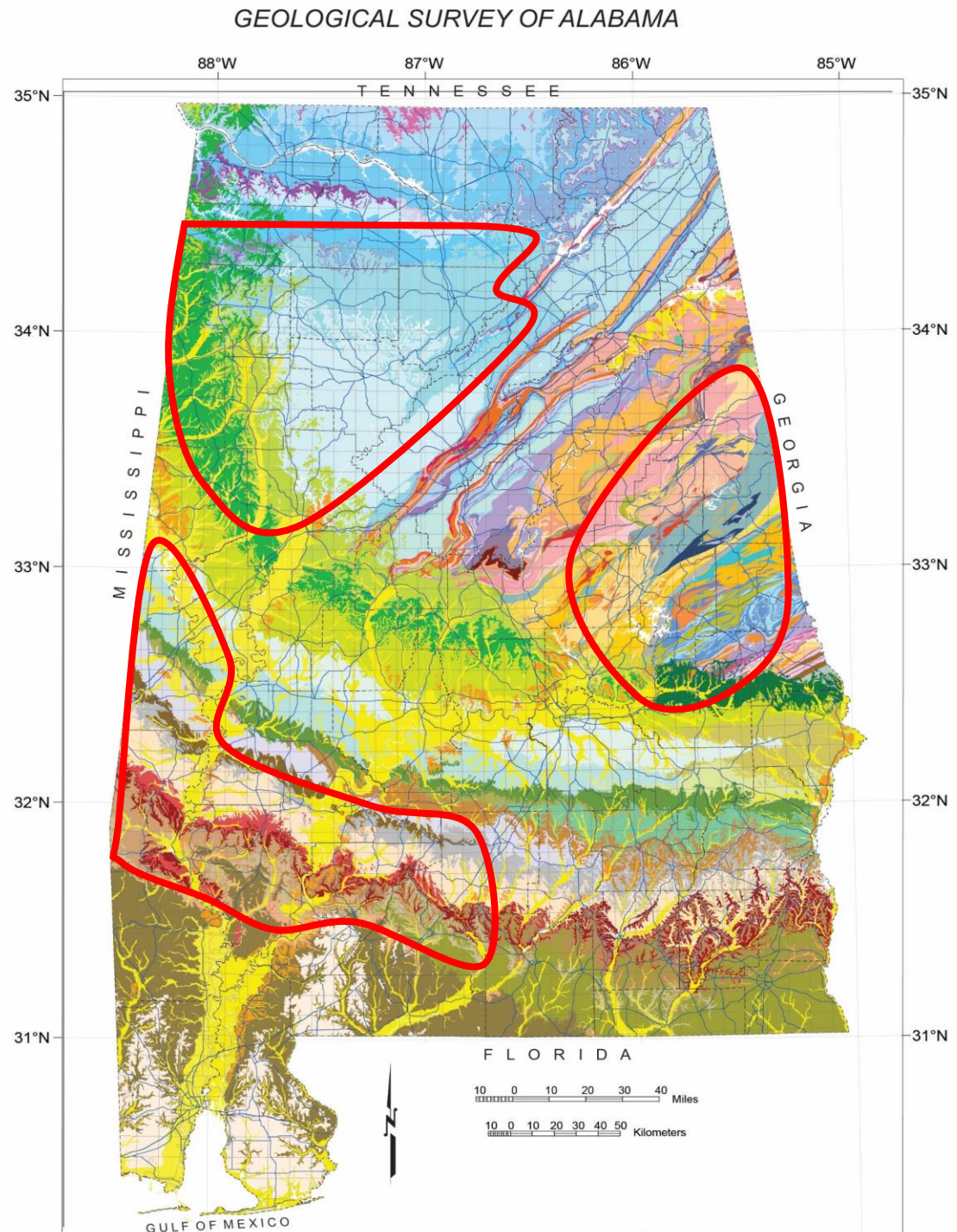
How Much Water Resource Management Do We Need?



Issues on the Horizon

- Legal regime for water resource access (riparian rights)
- Aging and inadequate public water supply infrastructure
- Interbasin transfers and distribution of water to the “have nots”
- Expanding agricultural irrigation
- Groundwater development conflicts

The “Have Nots”



Discussion

